

Please type a plus sign (+) inside this box →

PTO/SB/08A (08-00)

Approved for use through 10/31/2002. OMB 0651-0031
U.S. Patent and Trademark Office: U.S. DEPARTMENT OF COMMERCE

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number.

Substitute for form 1449A/PTO

NOV 14 2005

INFORMATION DISCLOSURE STATEMENT BY APPLICANT

(use as many sheets as necessary)

Sheet

1

of

2

Complete if Known

Application Number	10/619,798
Filing Date	July 17, 2003
First Named Inventor	Subir Ghosh
Group Art Unit	2188
Examiner Name	Kevin L. Ellis

Attorney Docket Number

OPTI 3140-6

U.S. PATENT DOCUMENTS

Examiner Initials*	Cite No. ¹	U.S. Patent Document		Name of Patentee or Applicant of Cited Document	Date of Publication of Cited Document MM-DD-YYYY	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear
		Number	Kind Code ² (if known)			
JK	A1	5,353,415		Wolford et al.	10-04-1994	
	A2	5,420,991		Konigsfeld et al.	05-30-1995	
	A3	5,511,226		Zilka	04-23-1996	
	A4	5,572,702		Sarangdhar et al.	11-05-1996	
	A5	5,335,335		Jackson et al.	08-02-1994	
	A6	5,072,369		Theus et al.	12-10-1991	
JK	A7	5,325,503		Stevens et al.	06-28-1994	
	A8					
	A9					
	A10					
	A11					
	A12					
	A13					
	A14					
	A15					
	A16					
	A17					
	A18					
	A19					
	A20					

FOREIGN PATENT DOCUMENTS

Examiner Initials*	Cite No. ¹	Foreign Patent Document		Name of Patentee or Applicant of Cited Document	Date of Publication of Cited Document MM-DD-YYYY	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear	T ⁶
		Office ³	Number ⁴				
JK	B1	EP 0 288 649		Gach et al.	11-02-1988		
JK	B2	EP 0 261 029		Rubinfeld	09-15-1987		
	B3						
	B4						
	B5						
	B6						
	B7						
	B8						
	B9						
	B10						

Examiner Signature

Kevin L. Ellis

Date Considered

4/18/06

*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

¹ Unique citation designation number. ² See attached Kinds of U.S. Patent Documents. ³ Enter Office that issued the document, by the two-letter code (WIPO Standard ST.3). ⁴ For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. ⁵ Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST. 16 if possible. ⁶ Applicant is to place a check mark here if English language Translation is attached.

Burden Hour Statement: This form is estimated to take 2.0 hours to complete. Time will vary depending upon the needs of the individual case. Any comments on the amount of time you are required to complete this form should be sent to the Chief Information Officer, U. S. Patent and Trademark Office, Washington, DC 20231, DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Assistant Commissioner for Patents, Washington, DC 20231.

Please type a plus sign (+) inside this box →

PTO/SB/08B (08-00)

U. S. Patent and Trademark Office: U.S. DEPARTMENT OF COMMERCE

Substitute for form 1449B/PTO		Complete if Known	
INFORMATION DISCLOSURE STATEMENT BY APPLICANT		Application Number	10/619,798
(use as many sheets as necessary)		Filing Date	July 17, 2003
		First Named Inventor	Subir Ghosh
		Group Art Unit	2188
		Examiner Name	Kevin L. Ellis
		Attorney Docket Number	OPTI 3140-6
Sheet	2	of	2

OTHER PRIOR ART - NON PATENT LITERATURE DOCUMENTS

Examiner Signature	Karen L. Ellis	Date Considered	4/18/06
-----------------------	----------------	--------------------	---------

*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 809. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

¹ Unique citation designation number. ² Applicant is to place a check mark here if English language Translation is attached.

Burden Hour Statement: This form is estimated to take 2.0 hours to complete. Time will vary depending upon the needs of the individual case. Any comments on the amount of time you are required to complete this form should be sent to the Chief Information Officer, U. S. Patent and Trademark Office, Washington, DC 20231. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Assistant Commissioner for Patents, Washington, DC 20231.

Please type a plus sign (+) inside this box →

PTO/SB/08B (08-00)

Approved for use through 10/31/2002. OMB 0651-0031

U. S. Patent and Trademark Office: U. S. DEPARTMENT OF COMMERCE
Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number.



Substitute for form 1449B/PTO

INFORMATION DISCLOSURE STATEMENT BY APPLICANT

(use as many sheets as necessary)

Sheet

1

of

3

Complete if Known

Application Number	10/619,798
Filing Date	15 July 2003
First Named Inventor	Subir Ghosh
Group Art Unit	2188
Examiner Name	ELLIS, Kevin L.
Attorney Docket Number	OPTI 3140-6

OTHER PRIOR ART - NON PATENT LITERATURE DOCUMENTS

Examiner Initials*	Cite No. ¹	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.	T ²
UK	C1	MOTOROLA INC., "PowerPC 601 RISC Microprocessor Technical Summary", Freescale Semiconductor, Inc., 1993	
UK	C2	NORMAN P. JOUPPI, "Improving Direct-Mapped Cache Performance by the Addition of a Small Fully-Associative Cache and Prefetch Buffers, 18 Computer Architecture News 364-373, 1990	
UK	C3	NORMAL P. JOUPPI, "Reducing Compulsory and Capacity Misses", WRL Technical Note TN-53, August 1990	
UK	C4	FREDRIK DAHLGREN ET AL., "Sequential Hardware Prefetching in Shared-Memory Multiprocessors", 6 IEEE Transactions on Parallel and Distributed Systems 733-746 , 1995	
UK	C5	DEAN M. TULLSEN, SUSAN J. EGGERS, "Limitation of Cache Prefetching on a Bus-Based Multiprocessor", Proceedings of the 20th Annual International Symposium on Computer Architecture at 278-88, 1993	
UK	C6	WILLIAM Y. CHEN ET AL., "Data Access Microarchitectures for Superscalar Processors with Compiler-Assisted Data Prefetching", Proceedings of the 24th Annual International Symposium on Microarchitecture at 69-73, 1991	
UK	C7	ALAN JAY SMITH, "Cache Memories", 14 ACM Computing Surveys 473-530, 1982	
WR	C8	JEAN-LOUP BAER & TIEN-FU CHEN, "An Effective On-Chip Preloading Scheme to Reduce Data Access Penalty", In Proceedings of Supercomputing '91 at 176-86, 1991	
WR	C9	TIEN-FU CHEN & JEAN-LOUP BAER, "Effective Hardware-Based Data Prefetching for High Performance Processors, 44 IEEE Transactions on Computer 609-623, May 1995	
UK	C10	TIEN-FU CHEN & JEAN-LOUP BAER, "A Performance Study of Software and Hardware Prefetching", 22 Computer Architecture News 223-232, 1994	
UK	C11	TIEN-FU CHEN & JEAN-LOUP BAER, "Reducing Memory Latency via Non-blocking and Prefetching Caches", Fifth International Conference on Architectural Support for Programming Languages and Operating Systems at 51-61, 1992	

Examiner Signature	Kevin L. Ellis	Date Considered	4/18/06
--------------------	----------------	-----------------	---------

*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

¹ Unique citation designation number. ² Applicant is to place a check mark here if English language Translation is attached.

Burden Hour Statement: This form is estimated to take 2.0 hours to complete. Time will vary depending upon the needs of the individual case. Any comments on the amount of time you are required to complete this form should be sent to the Chief Information Officer, U. S. Patent and Trademark Office, Washington, DC 20231. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Assistant Commissioner for Patents, Washington, DC 20231.

Please type a plus sign (+) inside this box →

PTO/SB/08B (08-00)

Approved for use through 10/31/2002. OMB 0651-0031
U. S. Patent and Trademark Office: U. S. DEPARTMENT OF COMMERCE

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number.

Substitute for form 1449B/PTO

INFORMATION DISCLOSURE STATEMENT BY APPLICANT

(use as many sheets as necessary)

Sheet

2

of

3

Complete if Known

Application Number	10/619,798
Filing Date	15 July 2003
First Named Inventor	Subir Ghosh
Group Art Unit	2188
Examiner Name	ELLIS, Kevin L.

Attorney Docket Number

OPTI 3140-6

OTHER PRIOR ART – NON PATENT LITERATURE DOCUMENTS

Examiner Initials*	Cite No. ¹	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.	T ²
KK	C12	LUCIEN CENSIER & PAUL FEAUTRIER, "A New Solution to Coherence Problems in Multicache Systems", 27 IEEE Transactions on Computers 1112-1118, 1978	
KK	C13	MICHEL DUBOIS ET AL., "Memory Access Buffering in Multiprocessors", 14 Computer Architecture News 434-442, 1986	
KK	C14	JOHN W.C. FU & JANAK H. PATEL, "Data Prefetching in Multiprocessor Vector Cache Memories", Proceedings of the 18th Annual International Symposium on Computer Architecture at 54-63, 1991	
KK	C15	JOHN W.C. FU & JANAK H. PATEL, "Stride Directed Prefetching in Scalar Processors", Proceedings of the 25th Annual International Symposium on Microarchitecture at 102-10, 1992	
KK	C16	EDWARD H. GORNISH ET AL., "Compiler-Directed Data Prefetching in Multiprocessors with Memory Hierarchies", Proceedings of the 1990 International Conference on Supercomputing at 354-368, 1990	
KK	C17	ALEXANDER C. KLAIBER & HENRY M. LEVY, "An Architecture for Software-Controlled Data Prefetching", Proceedings of the 18th Annual International Symposium on Computer Architecture at 43-53, 1991	
KK	C18	DAVID KROFT, "Lockup-Free Instruction Fetch-Prefetch Cache Organization", Proceedings of the 8th Annual International Symposium on Computer Architecture at 81-5, 1981	
KK	C19	ROLAND L. LEE, "The Effectiveness of Caches and Data Prefetch Buffers in Large-Scale Shared Memory Multiprocessors", (May 1987) (Ph.D. thesis, University of Illinois at Urbana-Champaign)	
KK	C20	ROLAND L. LEE ET AL., "Data Prefetching in Shared Memory Multiprocessors, Proceedings of the 1987 International Conference on Parallel Processing at 28-31, 1987	
KK	C21	TODD C. MOWRY ET AL., "Design and Evaluation of a Compiler Algorithm for Prefetching", Fifth International Conference on Architectural Support for Programming Languages and Operating Systems at 62-73, 1992	
KK	C22	ALLAN K. PORTERFIELD, "Software Methods for Improvement of Cache Performance on Supercomputer Applications (May 1989) (Ph.D. thesis, Rice University)	

Examiner Signature

Kevin L. Ellis

Date Considered

4/18/06

*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

¹ Unique citation designation number. ² Applicant is to place a check mark here if English language Translation is attached.

Burden Hour Statement: This form is estimated to take 2.0 hours to complete. Time will vary depending upon the needs of the individual case. Any comments on the amount of time you are required to complete this form should be sent to the Chief Information Officer, U. S. Patent and Trademark Office, Washington, DC 20231. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Assistant Commissioner for Patents, Washington, DC 20231.

Please type a plus sign (+) inside this box → +

PTO/SB/08B (08-00)

U. S. Patent and Trademark Office: U.S. DEPARTMENT OF COMMERCE

Substitute for form 1449B/PTO				Complete if Known	
INFORMATION DISCLOSURE STATEMENT BY APPLICANT <i>(use as many sheets as necessary)</i>				Application Number	10/619,798
				Filing Date	15 July 2003
				First Named Inventor	Subir Ghosh
				Group Art Unit	2188
				Examiner Name	ELLIS, Kevin L.
Sheet	3	of	3	Attorney Docket Number	OPTI 3140-6

OTHER PRIOR ART – NON PATENT LITERATURE DOCUMENTS

Examiner Initials*	Cite No.*	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.	T ²
W.E	C23	TIEN-FU CHEN, "Data Prefetching for High-Performance Processors (July 1993) (Ph.D. Thesis, University of Washington)	
	C24		

Examiner Signature	Kevra L. Ellis	Date Considered	4/18/06
-----------------------	----------------	--------------------	---------

*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

¹ Unique citation designation number. ² Applicant is to place a check mark here if English language Translation is attached.

Burden Hour Statement: This form is estimated to take 2.0 hours to complete. Time will vary depending upon the needs of the individual case. Any comments on the amount of time you are required to complete this form should be sent to the Chief Information Officer, U. S. Patent and Trademark Office, Washington, DC 20231. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Assistant Commissioner for Patents, Washington, DC 20231.